RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number: <u>69</u>

Source:

Date Processed by STIC:

ENTERED

CRF Errors Edited by the STIC Systems Branch

		/amino acid n	umbers/text	in cases wh	ere the sequ
text "wrapp	ed" to the r	next line			
		è			
Corrected t	he SEO ID	NO. Sequenc	e numbers e	dited were:	•
		·			
					_
Incontrol on	,	muolois mumi		d of a1-5	alima OEO
Inserted or NO's edite		nucleic numb	er at the end	d of a nuclei	c line. SEQ
.,	<u></u>	_ 7_			
		<i></i>			
Dalatada	invalid ba		. C Cl - 44 .		1
Deleteu:	_ invanu be	eginning/end-c	n-me text;_	page nu	mbers
	•				
Incorted mo	ndatory he	adings/numer	ic identifiers	s, specificall	v:
inscitcu ina	•	8		, .1	, -
inscreed ma					
				· · · · · ·	•
•	onses to san	ne line as head	ding/numeri	c identifier,	specifically:
•	onses to san	ne line as heac	ding/numeri	c identifier,	specifically:
•	onses to san	ne line as head	ding/numeri	c identifier,	specifically:

Revised 09/09/2003



IFW16

RAW SEQUENCE LISTING DATE: 08/29/2005
PATENT APPLICATION: US/09/890,836C TIME: 11:40:41

Input Set : A:\pto.kd.TXT

4 <110> APPLICANT: Andrew Bett

Output Set: N:\CRF4\08292005\1890836C.raw

```
5
              Volker Sandiq
              Rima Youil
      6
      8 <120> TITLE OF INVENTION: IMPROVED HELPER DEPENDENT VECTOR SYSTEM
              FOR GENE THERAPY
     11 <130> FILE REFERENCE: 20377YP
     13 <140> CURRENT APPLICATION NUMBER: US 09/890,836C
     14 <141> CURRENT FILING DATE: 2001-08-03
     16 <150> PRIOR APPLICATION NUMBER: PCT/US00/02405
     17 <151> PRIOR FILING DATE: 2000-01-31
     19 <150> PRIOR APPLICATION NUMBER: 60/138,134
     20 <151> PRIOR FILING DATE: 1999-06-08
     22 <150> PRIOR APPLICATION NUMBER: 60/118,601
     23 <151> PRIOR FILING DATE: 1999-02-04
     25 <160> NUMBER OF SEQ ID NOS: 17
     27 <170> SOFTWARE: FastSEQ for Windows Version 4.0
     29 <210> SEQ ID NO: 1
     30 <211> LENGTH: 15
     31 <212> TYPE: DNA
     32 <213> ORGANISM: Artificial Sequence
     34 <220> FEATURE:
     35 <223> OTHER INFORMATION: Consensus sequence
W--> 37 <221> NAME/KEY: misc feature
     38 <222> LOCATION: (1)...(15)
     39 <223> OTHER INFORMATION: n = A, T, C or G
W--> 41 <400> 1
W--> 42 atttgnnnnn nnncg
                                                                            15
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     45 <211> LENGTH: 10
     46 <212> TYPE: DNA
     47 <213> ORGANISM: Artificial Sequence
     49 <220> FEATURE:
     50 <223> OTHER INFORMATION: Adenovirus 5
     52 <400> SEQUENCE: 2
     53 attttgtgtt
                                                                                 10
     55 <210> SEQ ID NO: 3
     56 <211> LENGTH: 10
     57 <212> TYPE: DNA
     58 <213> ORGANISM: Artificial Sequence
     60 <220> FEATURE:
     61 <223> OTHER INFORMATION: Consensus sequence
     63 <400> SEQUENCE: 3
                                                                                 10
     64 attttgttgt
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Input Set : A:\pto.kd.TXT

Output Set: N:\CRF4\08292005\1890836C.raw

66 <210> SEQ ID NO: 4 67 <211> LENGTH: 158	
68 <212> TYPE: DNA 69 <213> ORGANISM: Artificial Sequence	
71 <220> FEATURE:	
72 <223> OTHER INFORMATION: Synthetic packaging signal	
74 <400> SEQUENCE: 4	
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76 gggccgagta agatttgacc gtttacgcgg ggactttgaa taagagcgag tgaaatctga	120
77 ataattttgt tgtactcata gcgcgtaatc tctagacg	158
79 <210> SEQ ID NO: 5	
80 <211> LENGTH: 158 81 <212> TYPE: DNA	
82 <213> ORGANISM: Artificial Sequence	
84 <220> FEATURE:	
85 <223> OTHER INFORMATION: Adenovirus 5	
87 <400> SEQUENCE: 5	
88 gtacacagga agtgacaatt ttcgcgcggt tttaggcgga tgttgtagta aatttgggcg	60
89 taaccgagta agatttggcc attttcgcgg gaaaactgaa taagaggaag tgaaatctga	120
90 ataattttgt gttactcata gcgcgtaatc tctagacg	158
92 <210> SEQ ID NO: 6	
93 <211> LENGTH: 65	
94 <212> TYPE: DNA	
95 <213> ORGANISM: Artificial Sequence 97 <220> FEATURE:	
98 <223> OTHER INFORMATION: Linker	
100 <400> SEQUENCE: 6	
101 agctcggccg attattggcg cgccagatct gcggccgctt ctagaaacgc gtgaattcgg	60
102 cgcca	65
105 <210> SEQ ID NO: 7	
106 <211> LENGTH: 65	
107 <212> TYPE: DNA	
108 <213> ORGANISM: Artificial Sequence	
110 <220> FEATURE: 111 <223> OTHER INFORMATION: Linker	
111 <223> OTHER INFORMATION: LITTRE! 113 <400> SEQUENCE: 7	
113 (400) SEGUENCE. / 114 agettggege egaatteaeg egtttetaga ageggeegea gatetggege gecaataate	60
115 ggccg	65
118 <210> SEQ ID NO: 8	
119 <211> LENGTH: 40	
120 <212> TYPE: DNA	
121 <213> ORGANISM: Artificial Sequence	
123 <220> FEATURE:	
124 <223> OTHER INFORMATION: PCR Primer	
126 <400> SEQUENCE: 8	40
127 attggcgcgc cttctttctg ggatgattca gcatcaactc 129 <210> SEQ ID NO: 9	40
130 <211> LENGTH: 41	
131 <212> TYPE: DNA	

Input Set : A:\pto.kd.TXT

Output Set: N:\CRF4\08292005\I890836C.raw

132 <213> ORGANISM: Artificial Sequence 134 <220> FEATURE: 135 <223> OTHER INFORMATION: PCR Primer 137 <400> SEQUENCE: 9 41 138 gatcgtcggc cgcttgggtc atagacttct ttgagaacca g 140 <210> SEO ID NO: 10 141 <211> LENGTH: 41 142 <212> TYPE: DNA 143 <213> ORGANISM: Artificial Sequence 145 <220> FEATURE: 146 <223> OTHER INFORMATION: PCR Primer 148 <400> SEQUENCE: 10 149 atcagttage ggccgcacaa gctaagatca caaagctgtt t 41 151 <210> SEQ ID NO: 11 152 <211> LENGTH: 37 153 <212> TYPE: DNA 154 <213> ORGANISM: Artificial Sequence 156 <220> FEATURE: 157 <223> OTHER INFORMATION: PCR Primer 159 <400> SEQUENCE: 11 37 160 tatggcgcgc cgctgacacc cagcctgggt gccggtg 162 <210> SEQ ID NO: 12 163 <211> LENGTH: 39 164 <212> TYPE: DNA 165 <213> ORGANISM: Artificial Sequence 167 <220> FEATURE: 168 <223> OTHER INFORMATION: PCR Primer 170 <400> SEQUENCE: 12 39 171 tcgacgcgta gcgctgtgtg gccttggcag tttccatag 173 <210> SEQ ID NO: 13 174 <211> LENGTH: 45 175 <212> TYPE: DNA 176 <213> ORGANISM: Artificial Sequence 178 <220> FEATURE: 179 <223> OTHER INFORMATION: PCR Primer 181 <400> SEQUENCE: 13 45 182 tcagtaatgc ggccgcggga tcattcctgg actcagattg ttctg 184 <210> SEQ ID NO: 14 185 <211> LENGTH: 41 186 <212> TYPE: DNA 187 <213> ORGANISM: Artificial Sequence 189 <220> FEATURE: 190 <223> OTHER INFORMATION: PCR Primer 192 <400> SEQUENCE: 14 41 193 tattaaggcg ccgggcatgg gagtgatctc accaactctg g 195 <210> SEQ ID NO: 15 196 <211> LENGTH: 46 197 <212> TYPE: DNA 198 <213> ORGANISM: Artificial Sequence

Input Set : A:\pto.kd.TXT

Output Set: N:\CRF4\08292005\I890836C.raw

	<220> FEATO		ON: PCR Pri	ner			
203	<400> SEQUENCE: 15						
204							46
206	<210> SEQ 3	ID NO: 16					
207	<211> LENG	TH: 28068					
208	<212> TYPE	: DNA					
209	<213> ORGAN	NISM: Artif:	icial Sequer	nce			
211	<220> FEATU	JRE:					
212	<223> OTHER INFORMATION: Modified adenovirus						
	<400> SEQUI						
			cttattttgg				60
			gcgtgggaac				120
			ggaacacatg				180
			caggaagtga				240
	_		gagtaagatt			-	300
			tttgtgttac	_	_		360
			tggagactcg				420
			tttgattcgg		_		480
			ctccacagaa	-		_	540
			aatttggggg				600
			cctggcttga				660
			ttcatcagca				720
			cacccccac				780 8 4 0
			gctgaggaat	_		_	900
		_	acaacaacca ttttaggact				960
	_		ttcaccagaa				1020
			ataacttcat				1080
			aagagccctg				1140
			cagctggaag				1200
			ctctcctgct				1260
			agtggagaag				1320
			tattgcaata				1380
			tcagtagata				1440
	_		ttgagcattt		_		1500
			atctgtataa				1560
			gccaatgagg				1620
			gagcaggatg				1680
			tggaggtgtg				1740
			gaaacttaaa				1800
245	tttccaaggg	gaggtgtgga	cctccggaca	aatttttaag	aactaattat	aaatacttaa	1860
246	aaatgggaat	aagaagacaa	cctaactacc	tgaacagttt	tagagatgac	tcatgcccac	1920
247	cctctaaaac	ccaaacaaaa	acaacaaagt	caagaaaacc	catgaaatct	tagcaagcga	1980
248	tttctatgta	cttgtgaaaa	ggatttcttt	accattctaa	tgggatttat	gccaaccata	2040
249	gagggctcag	tgcccctccc	atggggtggt	tagtgagtac	agagctgagc	tcaccggcca	2100
250	tctgcagctt	catgttatca	agctccagtt	tgtccttgga	gcaaggttat	ctgggacatg	2160
			caatggacag				2220
252	taactttaaa	taccatttta	tagccacact	ggagttttga	agacctcaat	atgcaaatat	2280

Input Set : A:\pto.kd.TXT

Output Set: N:\CRF4\08292005\I890836C.raw

253	tactcaggtt	ctgattactt	gtctgctcca	tgataacaca	ctctaaaagc	aatgaatggg	2340
254	gcttatttgt	agagaactga	agcattttaa	gcttttgctc	aggaatccct	ggtagcttcc	2400
255	tgtgacttgc	aagatattag	tgatgggtca	agaaacagga	cccccatca	gcataacata	2460
256	cgcagtgcct	cagtagtcca	tcaggcagaa	aaaactgcag	atggcacatg	gaaatgacca	2520
257	gcggcggaag	ataccccgac	agtgtgggca	gttctatttc	agcagcaatc	aagaggggc	2580
				gggagcaagc			2640
				gatgagattc			2700
				tttctccatt			2760
				caacctccac			2820
				gtaaatccat			2880
				ttggtgggca			2940
	_			gaagtaagcc			3000
				ttactcatcc			3060
				tcagcccagt			3120
				caagtgcaag			3180
				ccccagtcat			3240
				ctgtgcttgt			3300
				gggaattctg			3360
				ccaggtccag			3420
			_	tcttaatcat			3480
		_		agcaaatact			3540
				ggcacttggg			3600
				caatgataaa			3660
				ggtgggttta			3720
				acatcagcta			3780
				atgtgaattt			3840
				tcaagtcaca			3900
				cctgggtttg			3960
				ctccttctct			4020
				ttctgtagct			4080
				ttcagctgct			4140
				gatattggcc			4200
				tatagtagtg			4260
				attctggaat			4320
				tgtaacagaa			4380
				aaagatgctc			4440
				gttcaagtca			4500
				gaggtgaagg			4560
				gccccatatc			4620
				gaaacaggaa			4680
				tggccaagtg			4740
				agaaagctgt			4800
			_	catccaacag			4860
				tgcaggatct			4920
				cttacggcag			4980
				tggcaaaagg			5040
	-			gcagatggag			5100
			_	aaacagttgt			5160
				aatggcaaat			5220

Input Set : A:\pto.kd.TXT

Output Set: N:\CRF4\08292005\1890836C.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:1; N Pos. 6,7,8,9,10,11,12,13

Invalid Line Length:

The rules require that a line not exceed 72 characters in length. This includes spaces.

Seq#:6; Line(s) 102
Seq#:7; Line(s) 115

VERIFICATION SUMMARY

DATE: 08/29/2005 TIME: 11:40:42

PATENT APPLICATION: US/09/890,836C

Input Set : A:\pto.kd.TXT

Output Set: N:\CRF4\08292005\1890836C.raw

L:37 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order! L:41 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:1

L:42 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:0

Raw Sequence Listing before editing, for reference only



IFW16

RAW SEQUENCE LISTING

DATE: 08/20/2005

PATENT APPLICATION: US/09/890,836C

TIME: 11:46:20

Input Set : A:\pto.da.TXT

Output Set: N:\CRF4\08202005\1890836C.raw

- 4 <110> APPLICANT: Andrew Bett
- Volker Sandig
- Rima Youil
- 8 <120> TITLE OF INVENTION: IMPROVED HELPER DEPENDENT VECTOR SYSTEM
- FOR GENE THERAPY
- 11 <130> FILE REFERENCE: 20377YP
- 13 <140> CURRENT APPLICATION NUMBER: US 09/890,836C
- 14 <141> CURRENT FILING DATE: 2001-08-03
- 16 <150> PRIOR APPLICATION NUMBER: PCT/US00/02405
- 17 <151> PRIOR FILING DATE: 2000-01-31
- 19 <150> PRIOR APPLICATION NUMBER: 60/138,134
- 20 <151> PRIOR FILING DATE: 1999-06-08
- 22 <150> PRIOR APPLICATION NUMBER: 60/118,601
- 23 <151> PRIOR FILING DATE: 1999-02-04
- 25 <160> NUMBER OF SEQ ID NOS: 17
- 27 <170> SOFTWARE: FastSEQ for Windows Version 4.0

Does Not Comply Corrected Diskette Needed

ERRORED SEQUENCES

- 66 <210> SEO ID NO: 4
- 67 <211> LENGTH: 158
- 68 <212> TYPE: DNA
- 69 <213> ORGANISM: Artificial Sequence
- 71 <220> FEATURE:
- 72 <223> OTHER INFORMATION: Synthetic packaging signal
- 74 <400> SEQUENCE: 4
- E--> 75 gtacacagga agtgactttt aacgcgcggt ttgttacgga tgttgtagta aatttgtcta
- W--> 76(60) ggccgagta agatttgacc gtttacgcgg ggactttgaa taagagcgag tgaaatctga
- E--> 77 (120) ataattttgt tgtactcata gcgcgtaatc tctagacg
 - 79 <210> SEQ ID NO: 5
 - 80 <211> LENGTH: 158
 - 81 <212> TYPE: DNA
 - 82 <213> ORGANISM: Artificial Sequence
 - 84 <220> FEATURE:
 - 85 <223> OTHER INFORMATION: Adenovirus 5
 - 87 <400> SEQUENCE: 5
- E--> 88 gtacacagga agtgacaatt ttcgcgcggt tttaggcgga tgttgtagta aatttgggcg
- W--> 89 60taaccgagta agatttggcc attttcgcgg gaaaactgaa taagaggaag tgaaatctga
- E--> 90 120ataattttgt gttactcata gcgcgtaatc tctagacg
 - 92 <210> SEQ ID NO: 6
 - 93 <211> LENGTH: 65
 - 94 <212> TYPE: DNA

158 \

ľċġcca

60ggccg

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/890,836C

DATE: 08/20/2005 TIME: 11:46:20

Input Set : A:\pto.da.TXT

Output Set: N:\CRF4\08202005\1890836C.raw

95 <213> ORGANISM: Artificial Sequence

97 <220> FEATURE:

98 <223> OTHER INFORMATION: Linker

100 <400> SEQUENCE: 6

W--> 101 agctcggccg attattggcg cgccagatct gcggccgctt ctagaaacgc gtgaattcgg

E--> 102 65

104 <210> SEQ ID NO: 7

105 <211> LENGTH: 65

106 <212> TYPE: DNA

107 <213> ORGANISM: Artificial Sequence

109 <220> FEATURE:

110 <223> OTHER INFORMATION: Linker

112 <400> SEQUENCE: 7

W--> 113 agettggege egaatteaeg egtttetaga ageggeegea gatetggege gecaataate

E--> 114 65

RAW SEQUENCE LISTING ERROR SUMMARY
PATENT APPLICATION: US/09/890,836C

DATE: 08/20/2005 TIME: 11:46:21

Input Set : A:\pto.da.TXT

Optput Set: N:\CRF4\08202005\1890836C.raw

Invalid Line Length:

The rules require that a line not exceed 72 characters in length. This includes spaces.

Seq#:6; Line(s) 101
Seq#:7; Line(s) 113

VERIFICATION SUMMARY

L:114 M:301 E: (44) No Sequence Data was Shown, SEQ ID:7

L:114 M:252 E: No. of Seq. differs, <211> LENGTH:Input:65 Found:0 SEQ:7

PATENT APPLICATION: US/09/890,836C

DATE: 08/20/2005 TIME: 11:46:21

Input Set : A:\pto.da.TXT

Output Set: N:\CRF4\08202005\1890836C.raw

L:37 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order! L:41 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:1 L:42 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:0 _L:75 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:60 SEQ:4 L:76 M:334 W: (2) Invalid Amino Acid in Coding Region, NUMBER OF INVALID KEYS:6 L:77 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:4 M:254 Repeated in SeqNo=4 L:77 M:320 E: (1) Wrong Nucleic Acid Designator, NUMBER OF INVALID KEYS:3 L:77 M:252 E: No. of Seq. differs, <211> LENGTH:Input:158 Found:98 SEQ:4 L:88 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:60 SEQ:5 L:89 M:334 W: (2) Invalid Amino Acid in Coding Region, NUMBER OF INVALID KEYS:6 L:90 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:5 M:254 Repeated in SeqNo=5 L:90 M:320 E: (1) Wrong Nucleic Acid Designator, NUMBER OF INVALID KEYS:3 L:90 M:252 E: No. of Seq. differs, <211> LENGTH:Input:158 Found:98 SEQ:5 L:101 M:334 W: (2) Invalid Amino Acid in Coding Region, NUMBER OF INVALID KEYS:7 L:102 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:6 L:102 M:301 E: (44) No Sequence Data was Shown, SEQ ID:6 - L:102 M:252 E: No. of Seq. differs, <211> LENGTH:Input:65 Found:0 SEQ:6 L:113 M:334 W: (2) Invalid Amino Acid in Coding Region, NUMBER OF INVALID KEYS:7 L:114 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:7

8/20/05